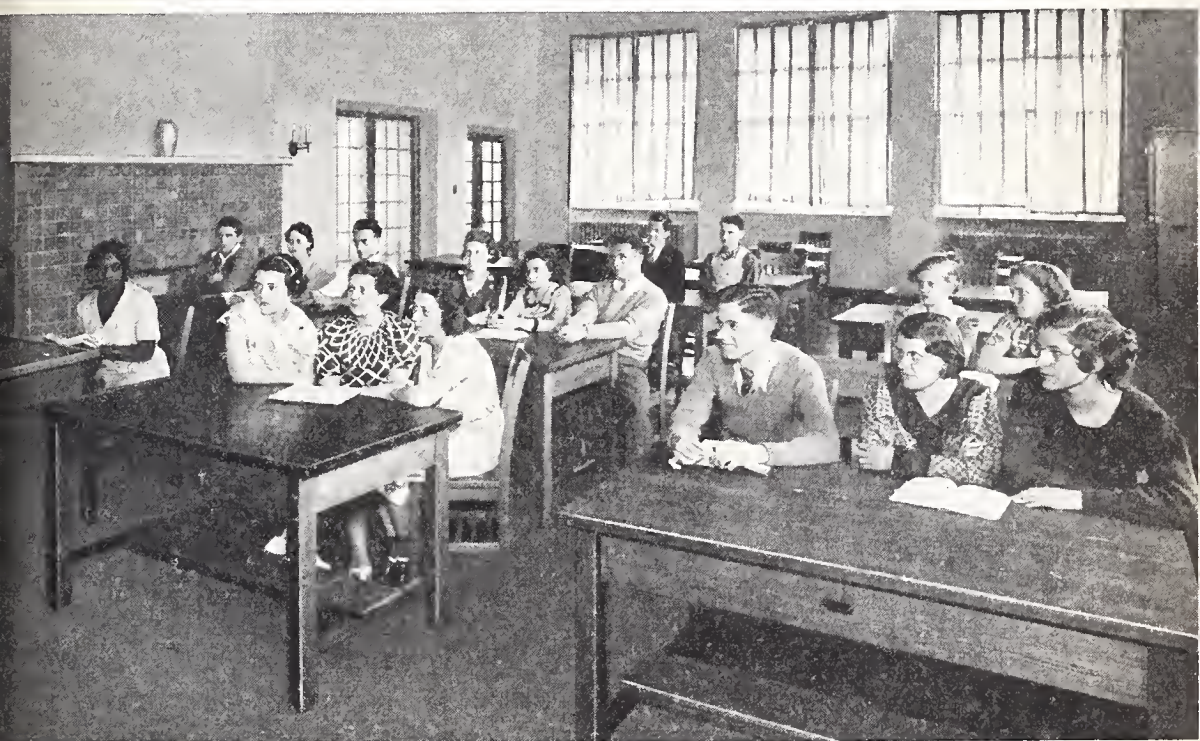


PENNSYLVANIA CURRICULUM STUDIES

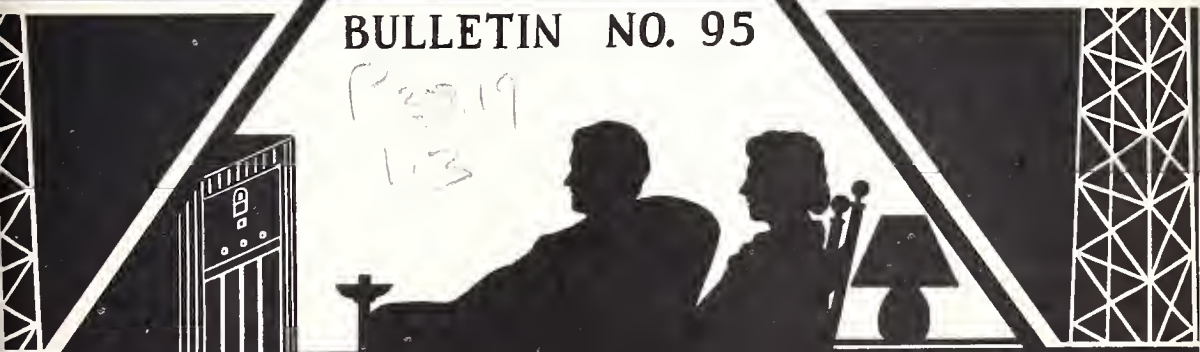
THE STATE OF  
The use of

# Radio in Developing Instructional Programs



BULLETIN NO. 95

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COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF PUBLIC INSTRUCTION  
HARRISBURG

DONALD M. CRESSWELL  
*Editor*

## RADIO AS A SOCIAL FORCE

RADIO has become one of the most important social forces in modern life. While many attempts are being made to use it as a constructive educational force, its wider possibilities in this direction have not been fully realized, despite the efforts of many far-seeing and civic-minded station owners and managers.

The fullest use of the radio as an educational instrument can come only when broadcasting facilities are more directly available to educational agencies. On the other hand, it is equally certain that much greater use could and should be made of facilities now available.

Many radio programs are excellent supplements to class instruction; boys and girls should be informed concerning radio techniques and procedures; critical attitudes of evaluation should be developed; and the larger problem of the importance, value, and place of the radio as a part of modern society should be understood by all.

In evaluating radio programs it should be kept in mind that efficiency should be determined, not necessarily by the extent to which present formal subjects are reinforced, but more by the degree to which they contribute to the cardinal objectives of education.

This bulletin has been prepared with the hope that it may contribute to a better understanding of these problems on the part of parents, teachers, and pupils. It is hoped that the suggestions outlined may encourage experimentation on the part of teachers and school districts which will show how we may better utilize the radio in the classrooms of the Commonwealth. The reports of such experimentation will be valuable to the Department in formulating future policies and it is requested that teachers report examples of successful procedures, addressing them to the Department of Public Instruction.

The preparation of this bulletin was made possible through a Civil Works Administration project. The bulletin is the work of William H. Bristow, Director, Curriculum Bureau, assisted by Miss Alice Chapen.

LESTER K. ADE

*Superintendent of Public Instruction*

July, 1935.



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## A SUGGESTED PROGRAM FOR THE USE OF RADIO IN PENNSYLVANIA SCHOOLS

Group listening in the school, planned in advance, articulated with course of study units, for appreciation, used especially as an instrument to vitalize the school curriculum.

Individual or group listening, either during school hours, or outside of school, to cover special features, drama, and other programs. Reports to be used in the classroom, in clubs, or as a part of the school activity program.

Cooperation with local broadcasting stations in the production of programs of general interest, and the interpretation of the schools and the school program to the community.

Cooperation with stations in the development of parental education programs, and in the establishment of harmonious pupil-teacher-parent relationships.

Utilization of radio as an instrument in the general adult education program of the community, through listening groups and program production.

Development of units of study at the various levels intended to establish criteria for the quality of broadcast reception and the ideas and materials presented.

Study and experimentation in the use of radio as an agency to reinforce the instructional program of the school.

Development of "radio appreciation" as an accepted part of the teacher training program, both in-service training and the preparation of teachers in teacher training institutions.

# THE USE OF RADIO IN DEVELOPING INSTRUCTIONAL PROGRAMS

## IMPORTANCE AND VALUE OF RADIO IN MODERN LIFE

RADIO has become an important educational, recreational, and commercial force in modern life. In the United States there are 21,455,799 radio homes, or 69.4 per cent. Of this number there are 1,913,349 radio homes in Pennsylvania, or 83.7 per cent.\* There are 599 radio broadcasting stations in the United States.\*\*

The radio brings to isolated communities and homes the finest music, up-to-the-minute news, interesting drama, important agricultural information, knowledge of market and business conditions.

The President's Committee on Recent Social Trends sets forth 150 ways in which the radio has affected modern life:

### I. ON UNIFORMITY AND DIFFUSION

1. Homogeneity of peoples increased because of like stimuli.
2. Regional differences in cultures become less pronounced.
3. The penetration of the musical and artistic city culture into villages and country.
4. Ethical standards of the city made more familiar to the country.
5. Distinction between social classes and economic groups lessened.
6. Isolated regions are brought in contact with world events.
7. Illiterates find a new world opened to them.
8. Restriction of variation through censorship resulting in less experiment and more uniformity.
9. Favoring the widely spread languages.
10. Standardization of diction and discouragement of dialects.
11. Aids in correct pronunciation, especially of foreign words.
12. Cultural diffusion among nations, as of United States into Canada and vice versa.

### II. ON RECREATION AND ENTERTAINMENT

13. Another agency for recreation and entertainment.
14. The enjoyment of music popularized greatly.
15. Much more frequent opportunity for good music in rural areas.
16. The manufacture of better phonograph music records encouraged.
17. The contralto favored over sopranos through better transmission.
18. Radio amplification lessens need for loud concert voices.
19. Establishment of the melodramatic playlet with few characters and contrasted voices.
20. Revival of old songs, at least for a time.

\* As of January 1, 1935, prepared by the Columbia Broadcasting System, in cooperation with Daniel Starch and the McGraw-Hill Publishing Company.

\*\* Seventh Annual Report of the Federal Radio Commission, June 30, 1933, p. 5.

21. Greater appreciation of the international nature of music.
22. Entertainment for invalids, blind, partly deaf, frontiersmen, etc.
23. With growth of reformatory idea, more prison installations.
24. Interest in sports increased, it is generally admitted.
25. Slight stimulation to dancing at small gatherings.
26. Entertainment on trains, ships and automobiles.

### III. ON TRANSPORTATION

27. Radio beams, enabling aviators to remain on course.
28. Directional receivers guide to port with speed and safety.
29. Aid furnished to ships in distress at sea.
30. Greater safety to airplanes in landing. Radio system also devised now for blind landing.
31. Chronometers are checked by time signals.
32. Broadcast of special weather reports aids the aviator.
33. Brokerage offices on ships made possible.
34. Receipt of communications enroute by air passengers.
35. Communication between airplanes and ships.
36. Ships directed for better handling of cargoes.

### IV. ON EDUCATION

37. Colleges broadcast classroom lectures.
38. Broadcasting has aided adult education.
39. Used effectively in giving language instruction.
40. Purchasing of textbooks increased slightly, it is reported.
41. Grammar school instruction aided by broadcasting.
42. Health movement encouraged through broadcast of health talks.
43. Current events discussion broadcast.
44. International relations another important topic discussed, with some social effects, no doubt.
45. Broadcasting has been used to further some reform movements.
46. The government broadcasts frequently on work of departments.
47. Many talks to mothers on domestic science, child care, etc.
48. Discussion of books aids selection and stimulates readers.
49. The relationship of university and community made closer.
50. Lessens gap schooling may make between parents and children.
51. Provisions of discussion topics for women's clubs.
52. New pedagogical methods, i. e., as to lectures and personality.
53. Greater knowledge of electricity spread.
54. The creation of a class of radio amateurs.

### V. ON THE DISSEMINATION OF INFORMATION

55. Wider education of farmers on agricultural methods.
56. Prevention of loss in crops by broadcasting weather reports.
57. Education of farmers on the treatment of parasites.
58. Market reports of produce permitting better sales.
59. Important telephone messages between continents.
60. Small newspapers, an experiment yet, by facsimile transmission.



61. News to newspapers by radio broadcasting.
62. News dissemination in lieu of newspapers, as in British strike.
63. Transmission of photographic likenesses, letters, etc., especially overseas where wire is not yet applicable.
64. Quicker detection of crime and criminals, through police automobile patrols equipped with radio.

#### VI. ON RELIGION

65. Discouragement, it is said, of preachers of lesser abilities.
66. The urban type of sermon disseminated to rural regions.
67. Services possible where minister can not be supported.
68. Invalids and others unable to attend church enabled to hear religious service.
69. Churches that broadcast are said to have increased attendance.
70. Letter-writing to radio religious speakers gives new opportunity for confession and confidence.

#### VII. ON INDUSTRY AND BUSINESS

71. In industry, radio sales led to decline in phonograph business.
72. Better phonograph recording and reproducing now used.
73. Lowering of cable rates followed radio telegraph development.
74. Point to point communication in areas without wires.
75. The business of the lyceum bureaus, etc., suffered greatly.
76. Some artists who broadcast demanded for personal appearance in concerts.
77. The market for the piano declined. Radio may be a factor.
78. Equipment cost of hotel and restaurant increased.
79. A new form of advertising has been created.
80. New problems of advertising ethics, as to comments on competing products.
81. An important factor in creating a market for new commodities.
82. Newspaper advertising affected.
83. Led to creation of new magazines.
84. An increase in the consumption of electricity.
85. Provision of employment for 200,000 persons.
86. Some decreased employment in phonograph and other industries.
87. Aid to power and traction companies in discovering leaks, through the assistance of radio listeners.
88. Business of contributing industries increased.

#### VIII. ON OCCUPATIONS

89. Music sales and possibly song writing has declined. Studies indicate that broadcasting is a factor.
90. A new provision for dancing instruction.
91. A new employment for singers, vaudeville artists, etc.
92. New occupations: announcer, engineer, advertising salesman.
93. Dance orchestras perhaps not increased but given prominence.

#### IX. ON GOVERNMENT AND POLITICS

94. In government, a new regulatory function necessitated.
95. Censorship problem raised because of charges of swearing, etc.
96. Legal questions raised beginning with the right to the air.
97. New specialization in law; four air law journals existing.

98. New problems of copyright have arisen.
99. New associations created, some active in lobbying.
100. Executive pressure on legislatures, through radio appeals.
101. A democratizing agency, since political programs and speeches are designed to reach wide varieties of persons at one time.
102. Public sentiment aroused in cases of emergencies like drought.
103. International affairs affected because of multiplication of national contacts.
104. Rumors and propaganda on nationalism have been spread.
105. Limits in broadcasting bands foster international arrangements.
106. Communication facilitated among belligerents in warfare.
107. Procedures of the nominating conventions altered somewhat.
108. Constituencies are kept in touch with nominating conventions.
109. Political campaigners reach larger audiences.
110. The importance of the political mass meeting diminished.
111. Presidential "barn-storming" and front porch campaign changed.
112. Nature of campaign costs affected.
113. Appeal to prejudice of local group lessened.
114. Campaign speeches tend to be more logical and cogent.
115. An aid in raising campaign funds.
116. Campaign speaking by a number of party leaders lessened.
117. Campaign promises over radio said to be more binding.
118. High government officers who broadcast are said to appear to public less distant and more familiar.

#### X. ON OTHER INVENTIONS

119. Development stimulated in other fields, as in military aviation.
120. The vacuum tube, a radio invention, is used in many fields, as for leveling elevators, automobile train controls, converting electric currents, applying the photo-electric cell, as herein-after noted. A new science is being developed on the vacuum tube.
121. Television was stimulated by the radio.
122. Developments in use of the phonograph stimulated by the radio.
123. Amplifiers for radio and talking pictures improved.
124. The teletype is reported to have been adapted to radio.
125. Geophysical prospecting aided by the radio.
126. Sterilization of milk by short waves, milk keeping fresh a week.
127. Extermination of insects by short waves, on small scale, reported.
128. Body temperatures raised to destroy local or general infections.
129. The condenser with radio tubes used variously in industry for controlling thickness of sheet material, warning of dangerous gas, etc.
130. Watches and clocks set automatically by radio.

#### XI. MISCELLANEOUS

131. Morning exercises encouraged a bit.

132. The noise problem of loud speakers has caused some regulation.
133. A new type of public appearance for amateurs.
134. Some women's clubs are said to find the radio a competitor.
135. Late hours have been ruled against in dormitories and homes.
136. Rumor as a mode of expression perhaps hampered in broadcasting.
137. Growth of suburbs perhaps encouraged a little.
138. Letter-writing to celebrities a widespread practice.
139. Irritation against possible excesses of advertising.
140. Development of fads of numerology and astrology encouraged.
141. Automobiles with sets have been prohibited for safety, in some places.
142. Additions to language, as "A baby broadcasting all night."
143. Aids in locating persons wanted.
144. Wider celebration of anniversaries aids nationalism.
145. Used in submarine detection.
146. Weather broadcasts used in planning family recreation.
147. Fuller enjoyment of gala events.
148. Home duties and isolation more pleasant.
149. Widens gap between the famous and the near-famous.
150. Creative outlet for youth in building sets.

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#### OTHER EFFECTS

1. Social values mentioned by A. G. Crane in *Education on the Air*, 1933, p. 21 (Adapted).
  - a. Radio reaches the illiterate.
  - b. At national crises, millions are reached simultaneously.
  - c. Radio reaches points inaccessible by other means.
  - d. Radio integrates standards of culture and ideals.
  - e. A democracy must have reliable and unprejudiced sources of information, the same for all.
2. Improvement of farm practices (*Education on the Air*, 1932, pp. 274-83; *Education by Radio* August 31, 1933).
3. Safeguarding the consumer from fraud.
  - a. Sheperd, W. G., "Gold bricks by radio." *Colliers* August 22, 1931, p. 10. The FRC test-car intercepts extra-State broadcasts by mountebanks and other lawbreakers.
  - b. WHA bulletin, 1933, states that Wisconsin farmers receive timely warnings of seed rackets and fertilizer frauds.
4. Extension of State services. Frank, Glenn. "Radio Functions." *Education by Radio* 2:10, January 21, 1932. Schmedeman, Hon. Albert G. (Governor of Wisconsin) "Advantages of State radio." *Education by Radio* March 30, 1933. State radio in Wisconsin serves the citizens by:
  - a. Extending free to the people the educational advantages of their colleges.
  - b. Reporting daily the findings of agricultural workers.
  - c. Extending the work of service agencies, as Board of Health.
  - d. Maintaining communication with the government officials.
  - e. Enabling all political parties to address the voters without charge.

5. Coastwise shipping and fruit culture aided by weather forecasts.
6. Crime detection facilitated by police broadcasts.
7. Regional and class lines reduced by the dissemination of cultural opportunities—opera, distinguished lectures, cosmopolitan viewpoints, excellent drama, outstanding personalities.
8. Radio lessens the magnetism of the demagog (Harbord, in *Forum*) Frank, Glenn. "The Radio and the American Future." *Education by Radio* 2:75, June 9, 1932.
9. Radio enlarges the sphere of the salesman.
10. ARNOLD, F. A. "Radio as a social force" in *Radio and Education* 1933 pp. 62-73.
11. COOPER, WILLIAM J. "Educational Functions of Radio," in *Education on the Air*, 1931, pp. 141-8.
12. RULE, JAMES N. "A ten-year program of educational development," in *Education on the Air*, 1932, p. 133— (esp. 139-40). Radio can help stabilize our heterogenous population; can publish useful information in home economics, gardening, home repairs; can give masterly teaching in English, music and the sciences.
13. PELTON, FRANK M. "Radio in Education." *Junior-Senior High School Clearing House*. December 1931, pp. 229-36. Decline in illiteracy 1920-1930 contemporary with developments of broadcasting (Cooper quoted). Program of the Vienna Conference on Educational Broadcasting of the World Association for Adult Education, 1930. p. 234. (a) Direct educational usage of radio: combatting illiteracy, supplementing professional and technical education, promoting health and hygiene, teaching of languages, music education; (b) Indirect educational usage of radio: Topics of political education, dissemination of news, dramatic broadcasts, non-vocational talks of an informational and stimulating character; (c) Technique of broadcasting: Forms—Talks, discussions, debates, running comments, showmanship (add dramatization); (d) Relationship between broadcaster and listener: Form of progress, eye-ear relations, discussion groups, correspondence courses, contacts with other educational groups.

In formal education, the radio has such advantages as: in literature, a living author can interpret his own work to a wide public; in science, specialists can present collateral material; in history and science, the textbooks can be supplemented by up-to-date developments; in modern languages, authoritative pronunciation and stress can reach every school; in current events, the narrative can come directly from witnesses or participants; model lessons can help classroom teachers; new personalities enlarge children's social horizon; develops clarity and brevity which radio speaking requires.

Some of these points are set forth in the following material:

AYLESWORTH, MERLIN H. "Social effects of broadcasting," reprinted in Aly and Shively's *Debate Handbook* 1933, pp. 142-9. The most isolated become citizens of the world; history is humanized; America has at last a Community Church.

"Radio accomplishment." *Century*, June 1929 (op. cit.) The competition for time and family attention compels programs to be clean, cheerful, and interesting.

BAGLEY, WILLIAM C. "What the future holds for broadcasting into the schools." *School and Society* 33:713-7, May 30, 1931. Actual lessons in basic subjects by



exceptionally competent teachers. Stimulation and appreciation, as by Dr. Damosch. Radio both supplements class teaching and helps the class teacher. *Response is a basic element in the art of teaching.*

COOPER, WILLIAM J. "The future of radio in education." *School and Society* 36:65-8, July 16, 1932. Radio: (a) brings the actual outside world into the classroom; (b) makes teachers more expert; (c) gives more vocational guidance at the Junior High School level; (d) supplements the correspondence school lesson.

CORBETT, E. A. (of the University of Alberta) "Education by radio." *Education by Radio*, December 24, 1931. "Perhaps the greatest of all values of the radio is \* \* \* (group discussion following) brief, well-informed talks on current world events \* \* \* (There are) barriers of languages, \* \* \* but (we have) the international language of music \* \* \* Now a million British families may hear, by their own firesides, the music of Germany, and come nearer than ever to the heart of a great people \* \* \* (Radio) creates among the listening public a familiarity with the sound of foreign tongues, and so stimulates a desire to learn them."

DIAMOND, THOMAS. "Radio as an aid in British education." *School and Society* 30:850 (a) remote schools benefit from experts and scholars; (b) vocabularies are improved; (c) teachers become more alert; (d) ex-pupils are encouraged to continue studying; (e) concentrated listening is a necessity; (f) overhead expenses for plays, orchestras, etc., are reduced.

HAGER, E. R. "Making good use of radio." *Education by Radio*, September 15, 1932.

HEWETT, JOHN R. "Education by Radio." in *Reference Shelf VIII:1*, p. 37. The adult student needs to waste no time nor energy in going to and from class.

KOON, C. M. "Social science by radio." *School and Society* 36:533, October 22, 1932. Radio is too brief and impermanent for presenting facts, but valid for stimulating an emotional interest, or for making history concrete by dramatization.

LISCHKA, CHARLES N. "Radio and the school." *Education by Radio*. December 8, 1932, p. 107. "There is, of course, no good excuse for the employment of radio in school unless it can accomplish something that can not otherwise be accomplished \* \* \* In literature, it can bring to hundreds of classrooms in scattered towns a talk or a reading by a living author; in current events it can, through the description of an eye-witness, make the school the very scene of the civic function; in foreign language, it can bring to a poor or remote school a lesson by a noted native teacher."

LUDINGTON, KATHERINE. "The air as an open forum," in *Radio and Education* 1933, pp. 73-6.

NATIONAL COMMITTEE ON EDUCATION BY RADIO. "Radio as a cultural agency." Proceedings of a National Conference on the Use of the Radio as a Cultural Agency in a Democracy. Edited by Tracy F. Tyler. Washington 1934. "Report contains text of the addresses, discussions, and committee reports of conference called by the National Committee, May 7-8, 1934. Includes comprehensive review of problems, valuable for library use and school study. Such topics as on whom rests the responsibility for the cultural use of the radio; governmental regulations; protection of rights of minorities; freedom of the air; principles to underlie radio policy."

TYSON, LEVERING. "The radio situation." *Journal of Adult Education* April 1931, reprinted in *Reference Shelf VIII:1*, pp. 49-59. Especially p. 56, competition so acute at all times that educational programs must be very good if they are to hold an audience.



WILBUR, R. L. "Radio lengthens the personality and power of the teacher." *School Life* 15:101-2. February 1930. Revival of the old delight in the minstrel and the orator. Effects secured by intellect rather than emotion. A great potential multiplication of human power. The variety in educational forms in the United States permits flexibility in experimentation.

Problems are raised by those working in this field along the following lines: A radio lesson takes no account of individual differences; a fifteen-minute lecture is tedious for young pupils; to many pupils the radio teacher is a voice only, not a genuine personality; radio allows no time for reflection and analysis; radio encourages passive listening; the teacher-pupil gap is difficult to bridge by ear only; much radio matter is impermanent; radio speech may be imperfectly heard or understood; many ideas and topics need more elaboration than radio time permits.

A more detailed discussion of these objections will be found in:

LISCHKA, CHARLES N., in *Education by Radio*, December 8, 1932.

ORTON, WILLIAM. "The level of thirteen-year-olds." *Atlantic Monthly* January 1931, p. 7

MORGAN, J. E. "The future of radio in American education." *Education by Radio*, November 10, 1932. "The daily degradation of that \* \* \* precious heritage, the mother tongue, and of our manners and morals, is going on over the radio on a colossal scale."

—"The new American Plan for Radio," in Aly and Shively's *Debate Handbook* 1933, pp. 81-111, esp. 90-3, harmful goods advertised by popular programs. Then, "Advertising, entertainment, formal instruction \* \* \* they are all educational. They affect our attitudes, influence our speech, and help to determine our purposes and ideals. Commercialized broadcasting may easily destroy all that the best homes and churches and schools have built up through the centuries." p. 93.

—"Education's rights on the air." *Education by Radio*, June 18, 1931; reprinted in *Reference Shelf* VIII:1, pp. 96-113. Esp. p. 97-103, in our highly specialized civilization it is impossible to have in every community experts in every activity, and radio can help to distribute the effectiveness of experts. "New Yorkism," pp. 102-3, deprecates "this rising threat of metropolitan invasion which is swamp-ing our country."

WILBUR, R. L. "The radio in our republic." *School and Society* 33:712, May 30, 1931. Printed matter can be re-read and verified; radio matter lacks permanence.

It is the hope of the Ohio State University Radio Conference, National Advisory Council, and others, to secure permanence by reprinting broadcast lectures and by having electrical transcriptions made of them. Downing, in the *Forum* for February 1934, p. 69, says the transcriptions are technically perfect and economical, and for local stations the ideal form for the educational type of broadcast.

## SELECTING BROADCASTS FOR SCHOOL AND HOME USE

It is important that each school and home group select for listening those programs which answer the individual needs of the school or home group. In approaching these problems, the following questions occur:

What programs are available in the desired fields.

Are these programs available at a time when the listener is free to use them?

Are these programs accessible in the listener's territory?

Are these programs available on the listener's receiving set?

Answers to these question must be found by each school, family, or other listening group through experimentations and consulting such sources as:

- a. Daily programs in the local newspapers have little selective value.
- b. Classified schedules are given monthly in *Radioland*; *Radio Stars*; *Radio Fan Fare* and White's *Radio Log*.
- c. A school or library can be placed on the mailing list for monthly schedules from CBS, NBC, WLW.
- d. They can purchase semester schedules of out-of-state educational broadcasts.
- e. The Sunday *New York Times*, Section 8, gives the week's schedule of chain broadcasts and also a list of "Leading Events."
- f. *Forum* has monthly Radio Reviews—not programs.
- g. Radio Institute of the Audible Arts, 80 Broadway, New York, N. Y. issue pamphlets giving classified schedules.

"The following instructions were issued by the Educational Department of South Australia in a memorandum entitled "Factors Toward Insuring Success." This memorandum is summarized through the information service of the International Bureau of Education.

1. Consider the curriculum and time-table of each school, together with its general character and special needs, before deciding to participate.
2. Take all necessary steps to obtain good reception.
3. Place the loud-speaker in a position which will ensure that every pupil will hear the lesson in comfort.
4. See that proper arrangements are made for the provision of maps, specimens, charts, etc., as indicated in the pamphlets issued to schools.
5. Arrange for supporting notes or lists of difficult words to be written if possible, upon the blackboard beforehand.
6. Remember that the broadcasting lesson is a form of cooperation between a teacher in the classroom and a teacher at the microphone.
7. See that each child uses his pamphlet as directed during the lesson, referring to the pictures and diagrams at the instance of the broadcasting teacher.
8. Revise and follow up the lesson and encourage research and individual practical work, for this applies with special force to broadcasting lessons where transient auditory impressions are the chief element.
9. See that questions and exercises play an important part in the revision of broadcasting lessons.
10. Remember that the broadcasting teacher regards the class teacher as a colleague, and will be glad to be consulted freely on any point of difficulty connected with the course, and considered criticisms both of the lessons and of the pamphlets, together with suggestions for improvement will be greatly valued.
11. Obtain the cooperation and interest of the children.
12. Supply suitable listening apparatus, if possible, similar to that used in other schools. Sets used should be obtained at a reason-

- able cost, be simple to manipulate, and give a good standard of reception.
13. Arrange for the periodical visits of an expert wireless mechanic, obtain his technical advice, and let him inspect and maintain the set in an efficient state.
  14. Encourage regular correspondence from pupils, and particularly the sending in of such matter as essays and tunes.
  15. See that the broadcaster is an expert, possesses a good delivery and the qualities of a teacher, has some teaching experience and some knowledge of the conditions prevailing in the schools, and has studied the special problem of wireless teaching.
  16. See that the classroom teacher is not out of sympathy with educational broadcasting, and has some knowledge of the subjects treated.
  17. Relieve the class from the strain of uninterrupted listening, by providing individual work in the following lesson.
  18. Arrange for lecturers to speak clearly and slowly, and spell any difficult words, keep a clear thread running through their lessons, recapitulate the main points at regular intervals, and confine themselves to as simple a presentation of their subjects as possible.
  19. Issue a syllabus giving details of times and subjects for the coming term at the end of each term, and circulate same.
  20. Organize demonstrations of class reception in various parts of the country.
  21. Forward a periodical questionnaire to all participating schools.
  22. Arrange for lectures, except in special circumstances, to be no longer than twenty minutes.
  23. Arrange for the lecturer to communicate with the teacher during the lecture, and for the teacher to comply with such requests.
  24. See that the wireless lesson is taken in the quietest room, which is suitable acoustically.

What are the results likely to accrue through introducing wireless lessons into the schools?

1. Radio could be used to teach subjects when no qualified teacher is available in the classroom.
2. Broadcasting should be able to supplement the efforts of the class teacher, and to bring about the fuller reading of newspapers, magazines, of investigation into books and encyclopædias.
3. Lessons by air, should bring about discussions by the pupils with the teacher, with other members of the class, and with the family.
4. In country districts radio should assist towards equalizing educational opportunity.
5. Broadcasting stations should be able to introduce an expert whom no school could possibly afford to have in person to talk to the scholars. It could also bring the inspiration of the expert with a great personality into the school.

The following references will also be helpful in answering these questions:

BISCH, DR. L. E. "Is radio a menace to children?" *Radioland*, January, 1934, p. 39. If not rigidly selected—yes. Parents can not always listen with their children. There is an improvement recently in some features.



DALE, EDGAR. *How to Appreciate Motion Pictures*, p. 224. Select pictures because of their merit rather than because of the presence in it of a much-discussed star. The manufacture and advertising of stars is an important industry in movie land.

HAGGIN. *New Republic*. Let our cultural heritage be given full opportunity on the air.

HARD. *Atlantic Monthly*. Material should be stimulating, artistic, authoritative, rather than factual.

HARRISON, MARGARET. In *Education on the Air*, 1931, p. 184. Content valued for its contribution to Education, rather than to the school curriculum.

MANN, ARTHUR. "The children's hour of crime." *Scribner's* May 1933, pp. 313-5. Analysis of a dozen children's programs.

MORGAN, J. E. "Radio and the Home." *Education by Radio*, January 19, 1933. "Music is more powerful than words in creating the subtle moods which fix attitudes, shape ideals, and fashion character." The quality of radio music is of greatest importance. Liquor advertising has already invaded the home.

RULE, JAMES N. "A ten-year program of educational development," in *Education on the Air*, 1932. "The dulled cultural appreciation of this materialistic age needs, more than any thing else from the radio, the refining influences of entertainment by better music, loftier drama, and cleaner fun." pp. 138-9.

WALLER, JUDITH. Discussion in *Education on the Air*, 1933, pp. 225-7. "Tarzan is off the air now. The advertizer \* \* \* is unwilling to keep programs \* \* \* which the majority of people do not want to hear." \* \* \* "Since many people have objected to Orphan Annie's language, she has been given a tutor."

—Evaluating programs for Junior High School grades. *School Review* 38:651 Nov. 1933. The U. S. Office of Education sponsored a questionnaire follow-up to the *American School of the Air* Tuesday-Thursday programs for these grades. Only 10 per cent of the blanks were returned. Preferences:

Subject .....	History
Type .....	Dramatization
Musical form .....	Band

Eighty-five per cent heard the programs distinctly. Teachers said that the selections were too mature. All enjoyed the music.

Individual and class group listeners can select constructively, by writing to the Station Director, commending what is good; suggesting desired services; analyzing objectionable aspects. The following writers give suggestions on these points:

DENISON, MERRILL. "The actor and the radio." *Theatre Arts Monthly*, Nov. 1933, pp. 849-55. Little blindness gap in music, news, and forum types of program where the artists have been forceful enough to dominate the medium. But Radio Drama is still weak, depending less upon the script than the actor, whose attitude and training need re-educating for radio use.

HEBERER, H. M. "The actor and radio," *Theatre Arts Monthly*, January 1934, p. 75. A temporary experiment at Kansas State College in writing, producing, and broadcasting plays. Net findings: Specialized education is needed in writing and acting for radio.

The National Broadcasting Company has classified its audience mail received during 1932 as follows:

29.6%	appreciation
.7%	constructive criticism

- 1.4% adverse criticism
- 39.3% requests for offers
- 6.1% requests for information
- 11.1% requests for invitations
- 3.7% response to contests
- 7.8% contributions

There is a disproportionately small amount of constructive criticism in radio mail.

LITLEDALE, CLARA S. "Better radio programs for children." *Parents Magazine*, May 1933, p. 13. "Write to the sponsors of the program and tell them why you object to it. Be specific, but at the same time be fair-minded."

## EVALUATING THE PROGRAM

Critical and intelligent listening is a characteristic which should result as a part of the educational program developed by the school. The following are indicative of the points which should be considered in making evaluations of radio programs:

1. CONTENT. Program should be checked for—
  - a. Objectionable advertising.
  - b. Undesirable emotional appeal, including the murals, the parade, and ostentation.
  - c. Unsupported statements; propaganda.
  - d. Aesthetic pleasure in lovely music, in a well-performed play, in a new travelog.
  - e. New facts or new correlations learned.
  - f. Worth while activities, current or postponed.
  - g. Prompt information of an important event.
  - h. The voice and oral words of a distinguished person.
2. SOCIAL VALUES  
This is of special concern to teachers, parents, and of parent-teacher groups, every region for itself. *Recent Social Trends*, pp. 152-7.
3. METHOD AND MANNER OF PRESENTATION
  - a. The studio environment, in physical construction and in policy.
  - b. The performers—their training, ability, professional attitude.
  - c. Craftsmanship—in music, speech, acting, synchronization, microphone technique, and other factors.
  - d. Comparison of performances.
4. RECEPTION

### REFERENCES FOR EVALUATION INCLUDE:

NORRIS, SENATOR GEORGE W. *Congressional Record*, February 23, 1933, p. 4928, quoted under "Advertising Securities by Radio," *Education by Radio* April 27, 1933. An indirect but very effective device for catching the consumer off his guard.

HEINL, ROBERT D., quoted under "False Advertising." *Education by Radio* May 25, 1933. By all means see that high school pupils (and their elders) learn sales resistance from some such incidents as these.—Does the Securities Act of 1933 cover radio advertising?

—"The Drug and Beauty Racket." *Education by Radio* October 26, 1933. The consumer's dollar is wasted on dubious and worthless articles, cleverly advertised.

—"I'm signing off." *Forum* 87-108, February 1932. Reprinted in *Education by Radio*, March 24, 1932. An anonymous announcer voices his disgust of the mercan-



tile and managerial "editing" of a program that was built to be artistic. The nimble-witted student in his teens will enjoy this bitter exposure—and learn to detect in programs the subtle hand of the salesman behind the performers.

FRIEND, NEITA OVIATT, "A Mother's Viewpoint." *Education by Radio* 4:17-18, May 10, 1934.

ALLEN, FREDERICK L. "Radio City: Cultural Center?" *Harper's* 164:534-545, April 1932. (Reprinted in *Education by Radio* May 12, 1932). May help adolescent boys and girls erect a defense against meaningless architecture, well-drilled attendants, and the ultimate in rugs. Includes a thumbnail biography of Roxy.

RAYMOND, ALLEN. "The Coming Fight Over News." *Outlook*, June, 1933.

"Static ahead!" *Outlook* 162:19. July, 1933. On Insidious advertising.

"The follies of radio." *Outlook*, August, 1933, pp. 38-41. Could be made serviceable for inoculating a junior group (aged, approximately, 13 or 14) against "Star" worship.

AYLESWORTH, M. H. "The listener rules broadcasting." *Nation's Business*, 17:122-8, September, 1929. The labor that goes into adapting the sponsored program to the goods advertised and to the mood of the probable purchaser.

HARROW, B. H. *Radio the Assistant Teacher*. "Few of us are judically minded. We are always propagandizing. Our newspapers, our magazines, our books, our personal contacts, are full of it. It is too much to expect that radio will be entirely free from it \* \* \* Is all propaganda bad? Shall thrift talks be avoided because the banker wants them? \* \* \*" (Shall Jane Addams, or Charles M. Schwab be excluded because they have been identified with particular interests? Shall school broadcasts avoid mention of tariff, repeal, strikes, refrigeration, dental care?) \* \* \* "Were we \* \* \* to eliminate all discussion of such topics on school broadcasts we would certainly destroy much of their value \* \* \* The teacher is on hand to help them (the children) to discriminate! She can safeguard them much more surely in this than she can in their general reading, attendance at the theatres and the like." (pp. 245-6)

The use of the sponsor's name is as justifiable as the name of the publisher in a textbook, of the donor in a church window, or the major contributor to a library. (p. 257)

"Some advertisers realize fully that \* \* \* unnecessary repetition of a trade name may harm instead of help an advertised company." (Crosley and Standard Oil are not mentioned in Ohio's School of the Air and California's Standard School broadcasts). (p. 256)

—"False Radio Advertising Opposed." *Education by Radio*, November 23, 1933, p. 55 quotes Alice Edwards in "NRA proposed code of fair competition for the radio broadcasting industry," as saying that "the broadcasting of false or misleading advertising is rapidly destroying the faith of the public in all radio advertising."

SCHLINK, F. J. "Shall the consumer have rights in the schools?" *Progressive Education*, May, 1932, pp. 333-8. Easy analysis of certain commodities for consumer guidance.

CHASE AND SCHLINK. *Your Money's Worth*. (No mention of radio, but much of salesmanship.)

DAWSON, MITCHELL. "Censorship on the air." *American Mercury*, March, 1934, pp. 257-68. An interesting collection of censored broadcasts, including a reference to that of Mr. Schlink.

FOX, F. C. "Children's preference in radio programs." U. S. Office of Education. 8 pages. (Not reliable; young children are ill-trained in analysis.)

HCKE, TRAVIS. "Radio goes educational." *Harper's*, 165:467-74, September, 1932. Good contemporary programs, pp. 469-70. There's also plenty of tabloid "education" on the air, such as "Einstein in five minutes, theme song and all."

DALE, EDGAR. *How to appreciate motion pictures*. Macmillan, 1933. Many implicit suggestions for the listening art: history of the industry; construction and engineering problems; standards of performance; adverse criticism. Chapters I, II, XII of direct value. Also pp. 222-8, Improving the Industry.

DEFORREST, LEE. "An appeal to Canada." *Education by Radio*, June 9, 1932. The Father of radio in America characterizes broadcasting as a nuisance, a huckstering orgy, a cheapjack show. Includes an authoritative outline of his connection with the industry.

KLEMM, GUSTAV. "A glance behind the scenes of Radio Land." *Etude*, 51:663 and 812. October and December, 1933. The studio environment and usages.

ARNOLD, F. A. Broadcasting Advertising. Chapter IV. The Studio. Chapter V. Making programs.

—"Britain's woman announcer." *Literary Digest*, September 9, 1933, p. 33. List of qualities includes: Natural; mezzo-soprano; unhurried; neither monotonous nor affected. Good clear vocalization; cool; business-like; authoritative; not pedantic.

LAWTON, SHERMAN P. Radio Speech. Chapters on vocabulary, style, delivery (pp. 137-157), attitude, children will like the list of studio terms, pp. 200-3.

—"President employs air and press to educate nation." *Literary Digest*, January 27, 1934, p. 9 (President Roosevelt's speeches) "are delivered in a manner that is the envy of the leading professional broadcasters. His ability to create a feeling of intimacy between himself and his listeners, his skill in placing emphasis on key words, his adroitness in presenting complicated matter in such simple terms \* \* \*"

—*Radio Digest*. October, 1930. pp. 8-11. President Hoover's considerateness for the radio audience.

GALDSTON, IAGO. "On the air." *American Journal on Public Health*, May, 1933, p. 524. A doctor gives excellent advice on microphone technique.

LUMLEY, F. H. Measurement in Radio. Ohio State University. 1934. A report of one of the Payne Fund studies on the influence of radio shows how broadcasting investigators have attempted to discover what programs appeal to listeners, what ones they actually hear, when they find time to listen, how much listening they do, and most important of all, how radio affects their daily activities.

RADIO: THE FIFTH ESTATE. Annals of the American Academy of Political and Social Science, January. 1935. A report of the association dealing with radio.

TYLER, T. F. An Appraisal of Radio Broadcasting in the Land Grant Colleges and State Universities. National Committee on Education by Radio, Washington, D. C. 1933. A study to determine the character and effectiveness of the broadcasting program in Land Grant colleges.

SALISBURY, MORSE. "Writing the Home Economics radio programs." *Journal of Home Economics*. 24:954-60, November, 1932. Sound pointers for all who prepare radio talks. Avoid presenting too many facts; avoid the third-person method in speaking; use sensible contemporary diction. Don't address the public—make a neighborly call.

SKILES, W. A. "What to sing before the microphone." *Etude*, 51:545, August, 1933. Reminder to singers to undertake only the type they themselves can perform well, not emulating the successes of someone else. Genuineness; sincerity.

## HOW TO LISTEN

It is essential, if the greatest good is to be achieved from the radio, that definite techniques for listening be developed. In the home, the essentials for satisfactory listening include such items as the following:

1. A good receiving set, adjusted for normal tone.
2. Broadcast selected from the reliable area, especially in summer.
3. No idle tuning-in. *School and Society*, 30:767 (One person in 239 was able to identify the program to which he was listening when questioned by telephone.)
4. Undivided attention. Discrimination is dulled by keeping the radio open during study or conversation. (Dykema) in *Education on the Air*, 1930, p. 332.
5. Repetition. Taste is primarily a matter of habit, combined with implicit social approval. Parents, playmates, and teachers, in that order, constitute the Social Verdict. Children who have been in the habit of hearing excellent music, and of observing their parents enjoy it, develop a preference for excellent music. Parents have primary control of the home radio. They can tune out programs which they consider undesirable for young children; they can condemn such programs by polite ridicule; they can suggest better programs; they can monopolize the listening hours themselves. Teachers can conduct for Oral English and Current Events, classroom discussion of programs with a view to: Finding out what the children now prefer and approving whatever is good; recommending at least one superior program expected within a day or two; mentioning at least one aspect of it to be particularly noticed (e. g. the harp, the speaker's voice, his microphone manner, etc.); encouraging repeated listening to similar programs until the taste is acquired.
6. Optional listening and reports, or listening assigned as home work.
7. Associations and aids. Pleasure in hearing is increased by other sensory associations—the appearance of the broadcasting studio; its construction and equipment; the method and technique of broadcasting music, lecture, dialog; acquaintance with a performer; possession of an allied skill (as violin, foreign-language, cooking, dramatics).

Pupils may care to compile a *Who's Who in Radio*: they may care to keep a notebook of programs heard, with reaction, as many do of books read and movies seen. The British manual of reprinted lectures, *The Listener*, can now be bought at 15c; but it is of purely academic value to most American listeners. The Sunday *New York Times* is the readiest source for programs available throughout Pennsylvania. For radiotricians and amateur mechanics the following are good: *Radio Craft*, *Radio World*, *QST*.

For distant-station enthusiasts there are: *Radio Index* (world-wide), *Radio News* and *Short-Wave*, *White's Radio Log* (for North America), and *Stevenson's Radio Bulletin* (for North America). For listeners there are about sixty radio magazines.



For effective use in the classroom the following suggestions are made:

1. Improved broadcasting—  
 More use of visual aids.  
 Better dramatizations.  
 Better grading—vocabulary and material.  
 Better rehearsing, etc.—Darrow. *Radio the Assistant Teacher*, p. 260.  
 Better selections in music.—Dykema in *Education on the Air*, 1930, p. 335.
2. Improved articulation between the program-maker and the classroom—  
 Topic or series synchronized with classroom study. (Cf. Science talks from Harrisburg, 1933).  
 Style and vocabulary adapted to the age of the expected audience.  
 Speaker's manner adjusted to expected audience (Koon: *The art of teaching by radio*, p. 7).  
 Class interest created in advance of the air lesson.
3. The listening group—  
 Small. Thirty or fewer. (*School Life*, June, 1929, p. 199).  
 Seated with consideration for individual differences.  
 Attitude business-like (including that of the teacher).  
 Materials for silent note-making.  
 Materials for visual aids (including music score—Dykema).
4. The discussion group—  
 For verifying words, facts, or numbers imperfectly heard.  
 For summarizing the benefits: information, enjoyment, suggested activity.
5. Translating the heard program into appropriate action.—Bagley.

*Current action:*

Rhythmics; gymnasium drill.  
 Drawing—Claxton.  
 Singing—Hager, in *Education by Radio*, September 15, 1932.  
 Playing a band instrument—Maddy.  
 Following directions.—Baker, McConnell, Maddy.

*Deferred action:*

Repeating the experience by phonograph record—Dykema.  
 Answering test questions—Sayre.  
 Accurate reporting.  
 Writing a letter.  
 Criticising the broadcast: voice and enunciation; pronunciation; tone, phrasing, control; manner; arrangement of material; statements.  
 Improving one's own speech, composition, dramatics, musical performance.  
 Obtaining further information: in the subject field; regarding the performers; regarding standards of performance.  
 Acquiring further skill.

*Indirect action:*

Developing one's imagination: "Seeing" a play through the ear.  
 Visualizing a pageant or ceremony.

"March of Time in the studio." *Radioland*, January, 1934, p. 18. Enjoying the pleasure of recognition, as in Music, Drama, Allusions.

Improving one's social attitudes.

## REFERENCES

The following references will be found helpful:

BAGLEY, WILLIAM C. *Elementary School Journal*, December, 1930. For greatest value, radio must stimulate pupils to allied activities.

BAKER, IDA M. "Radio lessons in arithmetic," in *Education on the Air*, 1931, pp. 158-162. Child participation; sustained interest; concentrated listening.

CLAXTON, WAYNE L. "Creative Art," in *Education on the Air*, 1933, pp. 128-32. Exhibits of work done by pupils while listening to program.

DAMROSCH, WALTER J. (His philosophy of radio education interpreted by Ernest La Prade, "The Damrosch Music Hour," in *Education on the Air*, 1930, pp. 218-23.

DARROW, B. H. "Radio education." *H. S. Teacher*, May, 1933, pp. 191-3. "Schools should either not listen at all or they should listen enthusiastically. They should inform themselves on a series of broadcasts as a whole." Interest should be aroused in advance, and attention sustained by every device known to teaching, as notebooks, discussion, and review.

DIAMOND, THOMAS. "Radio as an aid in British education." *School and Society*. 30:850, December 21, 1929. The classroom teacher prepares the background and visual aids; corrects the pupils' notes; clarifies difficulties; constitutes the visible teacher. She may send pupils' work to the broadcasting teacher; praise from the microphone is an added stimulus to pupil interest.

DYKEMA, PETER W. "Teaching music by radio," in *Education on the Air*, 1930, 330:41. Repeat the selection, as with a phonograph record, 337; listen wholeheartedly, 334; broadcast the better musical compositions, 335; use the score when listening, 338; learn to sing by radio, 339.

EVANS, DRAKE. "Try singing to speak well." *Radio Digest*, September, 1930, p. 7. Usable points in rhythmical expression, enunciation, voice control. Health as an attribute in a speaker.

HAGGIN, B. H. "Crutches for broadcast music." *New Republic*, December 7, 1932. The best training in music appreciation for beginners, of whatever age, is to set "the music before him phrase by phrase, so that he has detailed knowledge of the work; (also to) point out relations among phrases \* \* \* certain type relations, and the basic procedures which establish them in all music." p. 94.

HETTINGER, H. S. "What we know about the listening audience," *Radio and Education*, 1933, pp. 44-62.

KIRKPATRICK, CLIFFORD. "Report of a research into the attitudes and habits of radio listeners." St. Paul, Minnesota: Webb, 1933. Statistical and intensive. 60 pages. \$1.50.

KOON, C. M. *The Art of Teaching by Radio*. Superintendent of Documents.

LAWTON, SHERMAN P. *Radio Speech*, esp. pp. 137-57.

MCCONNELL, W. R. Quoted on radio vocabulary in *Education on the Air*, 1931, p. 251, by Dale.

MADDY, JOSEPH E. "Teaching band instruments by radio," in *Education on the Air*, 1932, pp. 158-60. Technique of directing invisible performers in their own homes.



ROEDER and URMSTON. "The radio enters the classroom." Grades 3, 6, and 7, at Scarsdale.

SAYRE, HARRISON M. "Current Events," in *Education on the Air*, 1930, pp. 359-65. Attention secured in part by dividing the invisible classes into four groups, each to keep a special list. Review questions at the end, without warning.

SUTTON, VIDA. "The selection and training of radio announcers," in *Education on the Air*, 1930, pp. 314-27. Her list of desirable qualities at the studio end is equally valid as a basis for the audience to use in appraising the performance.

TUBBS, E. V. "Radio in Chicago Schools." (See general bibliography.)

VOLKENING, HENRY. "Abuses of broadcasting." *Current History*, December, 1930. "Without continual effort to stimulate the listener to play an active and not merely a passive part, the result of broadcasting might be to weaken individual thought and initiative and blunt the critical faculty." p. 400 (quoted from Hadow).

Advertisers have many devices for appraising the size and the attentiveness of the audience (inviting audience mail, offering free or attractive articles, telephoning during a program, making a house-to-house canvass, and inspecting their own sales lists). They find it profitable to answer, in some form, all of this mail. The policy of the customer's unvarying *rightness* continues into the realm of sponsored programs. (But Denison, "Why isn't radio better?" *Harpers*, April, 1934, says the Letter Racket is turning broadcasters to use the telephone and other devices.)

Educators have made little attempt to determine audience reaction. People of superior intellect and distinction seem (1) to have little leisure for listening at all; (2) to enjoy chamber music or an address by Dr. Milliken without bursting into unrestrained enthusiasm; (3) indefinitely to postpone writing the note of appreciation.

The broadcasting company bases upon audience response its judgment of popular taste. Therefore, it might seem prudent for a women's club, a school faculty, or some such adult group to make a week's survey of the programs heard in their community, pool their judgments, and commit to writing the condemnation, the praise, the constructive suggestions. Such a procedure will improve community listening and the programs.

It is easy to dial-out what you don't approve of, and also easy to make a sweeping, oral condemnation of programs, of amount and nature of advertising, and of the quality of music. To discuss a week's programs honestly for forty minutes, to draw up a written review, is good exercise in discrimination and furnishes the basis for valid instructional materials.

## RADIO PROGRAMS FOR SCHOOL USE

An analysis made by the National Broadcasting Company for 1933 indicates the following distribution of program materials for that year:

*Music* constituted 67.3 per cent of all broadcasts by the National Broadcasting Company; but of that amount, only 7.9 per cent was officially labeled "educational;" and that fraction constituted 25.8 per cent of all "educational" material broadcast from their studios.

*Lectures* constituted 7 per cent of their total broadcasts; were rated as 100 per cent educational, and constituted 34 per cent of the educational materials.

The 1933 Annual Summary of Program Analysis for NBC follows:

<i>Per cent of total</i>	<i>Per cent of which is educational</i>	<i>Relative Rank of Educ'l Programs</i>
Music	67.3	7.9
Literature	11.2	14.2
Lectures	7.0	100.0
Outstanding Events	1.7	40.1
Current News	1.0	95.7
Women's	1.2	96.8
Children's	3.6	33.7
Physical Training	2.3	100.0
Religion	1.8	5.7
Reports	0.3	100.0
Novelty	2.6	0.0
	<hr/> 100.0	<hr/> 20.6
		<hr/> 100.0

Sponsored programs 25.5 per cent

Sustaining programs 74.5 per cent

The following indicate the type of outstanding broadcasts which schools and groups should be on the alert to discover and use:

Opera *Emperor Jones*, Metropolitan

Inauguration Day, from 15 microphones in Washington

Opening of seventy-third Congress

Opening of Century of Progress

Balbo's flight

Opening of the National Relief drive

Graf Zeppelin broadcasts

Stratosphere ascension

## REFERENCES

*Education on the Air*, 1930, '31, '32, '33 (except Science)

### ARITHMETIC

Baker, Ida M. (Cleveland "Radio lessons in Arithmetic" 1931, pp. 158-65  
(not used in 1933-34)

WMAQ, Thursdays, 1934

### ART

Claxton, Wayne L. (University of Wisconsin) "Creative Art." 1933,  
pp. 127-8 (Specimen broadcast, pp. 128-30)

Vogel, William G. (Cincinnati) "Teaching art appreciation by radio." 1933  
pp. 117-23 (Specimen broadcast, "Harp of the Winds," pp. 123-6)

### LANGUAGES

Mercer, C. H. "Foreign-language instruction by radio." 1930. pp. 365-75

Tabulation of language broadcasts. 1933, p. 367

WOSU, Columbus. French and Spanish. 1931, pp. 190-4. (Specimen broad-  
cast by M. Robert Foure. 1932, pp. 187-90)

### LITERATURE

Bushman, Annette. "Drama presentation by radio." 1930, p. 347

Ottawa drama broadcasts. 1933, p. 42

## MUSIC

Dykema, Peter (Columbia University) "Teaching music by radio." 1930, pp. 330-41

Maddy, Joseph (University of Michigan) "Teaching band instruments by radio." 1932, pp. 155-60

## SCIENCE

Carpenter, Harry A. "Teaching Science by radio." *Junior-Senior High School Clearing House* March 1934 pp. 421-7

Pennsylvania Department of Education. Science broadcasts, spring of 1933

## SOCIAL STUDIES

McConnell, W. T. (Miami University) Specimen broadcast, "Canada" Geography 1932, pp. 180-6

Mathews, N. D. "Social science broadcasts for Cleveland schools." 1932, pp. 177-80. Specimen broadcast, pp. 194-200

Sanderson, Virginia. "Civil Government for schools." 1933, pp. 133-7

Sayre, H. M. Specimen broadcast in Current Events. 1930, pp. 359-65

## TYSON, LEVERING. "Program Experimentation of the Council."

*Education by Radio* October 26, 1933, pp. 50-52

Labor and the Nation. May 1-July 3, 1932. CBS

You and Your Government. April 5-July 5, 1932; September 6, 1932, to date. NBC

Psychology Today. October 17, 1931-May 31, 1932. NBC

Vocational Guidance. February 18-May 24, 1932. CBS

Radio's Past and Future. Dr. Millikan. May 22, 1931

American Education Past and Future. Dr. Dewey

The Economic World Today. November 12, 1932-June 10, 1933. NBC

The Lawyer and the Public. February 12-May 21, 1933. CBS

The Expanding Universe. Sir Arthur Eddington

America and the World Situation. Symposium from Pasadena

BLAIR, H. "You and Your Government." *Education* 52:563, May 1932

BAGLEY, WILLIAM C. "American School of the Air starts November 9."

*School Life* November 1931, p. 54. Announcements of the third year's offerings.

Monday—Friday 2:30

Monday—History, American and European

Tuesday—Geography and Music

Wednesday—Literature: Drama and Appreciation

Thursday—Music and Fairy Tales (primary)

Music and Elementary Science (intermediate)

Friday—Vocational Guidance and Civics

"A high school conducts a school of the air." *School Review* 40:408 June 1932.

Language lessons broadcast in the noon hour by pupils of Marquette, Michigan, for adult listeners. Additional courses were requested.

"Long Beach uses radio." *Education by Radio* May 25, 1933. Program included "Growth of our Number System" and "The Romance of Mathematics."

## SOURCES OF ADVANCED PROGRAMS

*New York Times*, Sunday. Section 8.

NBC 30 Rockefeller Plaza, New York.

- a. NBC Music Appreciation Hour. Teachers' and Students' manuals. (In writing for this, or any information, please type or print your

name, address, official position, and organization with which you are concerned.) Student notebooks 10¢, \$9.00 per 100.

- b. Educational bulletin, 4-page monthly.

CBS 485 Madison Avenue, New York.

- a. American School of the Air schedule of broadcasts.

National Advisory Council on Radio in Education. 60 E. 42nd St., New York

- a. Instructor's Manual for *Listen and Learn* series.
- b. Listeners' handbook 25¢. University of Chicago Press.
- c. Printed addresses @ 10¢. University of Chicago Press.

Weekly or monthly schedules from WLW, WGY, and schools broadcasting Daily papers for Philadelphia, Pittsburgh, and Reading areas. (Program service discontinued, for the most part, after 1932.)

Ohio educational programs.

- a. Ohio School of the Air *Courier*. Courier Publishing Company. Box 25, Columbus, Ohio. 25¢ per semester.
- b. 6-page monthly bulletin from WOSU, Ohio State University.
- c. Cleveland newspapers and school broadcasts.

Wisconsin educational programs.

- a. Wisconsin School of the Air, WHA, Madison, Wisconsin. H. B. McCarty, Program Director. Mimeographed bulletin each semester.
- b. Wisconsin Radio Service, WHA. For adult education.

WMAQ Chicago *Daily News*. Miss Judith Waller, Manager. Monthly advance program of educational broadcasts.

Notes in current issues of *Forum*; *School Life*; and radio magazines.

British Broadcasting Corporation, Savoy Hill, WC2, London.

- a. The Radio Times. Weekly programs.
- b. The Listener. Reprints of lectures. Obtainable at 270 Madison Ave., New York.

Teachers College, Columbia University, selects a list of radio programs of possible educational value. (*Education on the Air* 1931, p. 187.) This service was not continued after 1930.

Local Stations. (Secure programs locally)

The following reinforcements for the radio lessons will be helpful:

#### 1. MUSIC.

- a. Records. Catalogs obtainable at music stores. See list in Instructor's Manual. NBC Music Appreciation Hour.
- b. Electrical Transcriptions. For broadcasting stations primarily. Obtainable from hundreds of producers, including:
  - RCA Victor Company, Camden, N. J.
  - McGregger and Solle, San Francisco
  - World Broadcasting System, Inc., 50 W. 57th Street, New York
  - Brunswick Balk Collendar Company, 1776 Broadway, New York
  - Standard Sound Recording Corporation, 220 E. 38th Street, New York
- c. Listener's Manuals, e. g. Student's Notebook. NBC Music Appreciation Hour.



## 2. TALKS, LECTURES, DRAMA, ETC.

- a. Reprints: Reprints from lectures, talks, plays, furnish materials for class and library use.

University of Pittsburgh, Pittsburgh, Pennsylvania.

National Advisory Council on Radio in Education. Obtainable through the University of Chicago Press, Chicago, Illinois.

National Committee on Education by Radio, 1201 Sixteenth Street, N. W., Washington, D. C.

Office of Education, Department of the Interior, Washington, D. C. (for library service).

- b. Recordings.

Ohio State University, Columbus, Ohio, has a number for sale (*Education on the Air* 1933, pp. 146-7).

- c. Transcriptions.

Consult Broadcasting Companies.

- d. Slides and pictures.

Keystone View Company, Meadville, Pennsylvania.

- e. Steel Tape recordings in England. (See *Education on the Air* 1932, pp. 200-203). For use *once*, shortly after recording; then demagnetized and used for further recording.

## PAMPHLETS AND BULLETINS

1. "American School of the Air." Keith and Johnson, compilers. The American School of the Air, 485 Madison Avenue, New York, New York.

2. Annual Report of the Director of the Radio Division to the Secretary of Commerce. Superintendent of Documents, Washington, D. C.

3. Annual Report of the Federal Radio Commission.

4. "Courier," State Department of Education, Columbus, Ohio. 25¢ per semester. The schedule of programs for the Ohio School of the Air.

5. *Education by Radio*. 4-page publication issued about fifteen times per year, by the National Committee on Education by Radio, 1201 16th Street, N. W., Washington, D. C.

6. Koon, Cline M. "The Art of Teaching by Radio." Office of Education, 1933. Superintendent of Documents, 10¢.

7. National Advisory Council on Radio in Education, Inc., 60 E. 42nd Street, New York, New York.

- a. "Proceedings," 1931, 1932, etc.

- b. Information Series. Several each year. e. g. No. 2, 1933, 30 pp. 25¢ Tyson: "What to read about radio."

- c. Listener's Notebooks. To accompany the year's broadcasts in adult education.

8. National Broadcasting Company, 30 Rockefeller Plaza, New York, New York.

- a. "Educational Bulletin," 4-page monthly, with programs.

- b. "Social Effects of Broadcasting," by M. H. Aylesworth. 11 pp.

- c. Manuals for NBC Music Appreciation Hour (for classes using them).

9. National Committee on Education by Radio, 1201 16th Street, N.



W., Washington, D. C.

- a. *Education by Radio* (above)
- b. Pamphlets on various subjects for distribution.
- c. Committees in various fields of education. write for information.

## RADIO STATIONS IN PENNSYLVANIA

<i>Location</i>	<i>Call Letters</i>	<i>Power</i>	<i>Kilocycles</i>
Allentown	WCBA	250w	1440
Allentown	WSAN	250w	1440
Altoona	WFBG	100w	1310
Clarion	WWPA	250w	850
Erie	WLEU	100w	1420
Glenside	WIBG	100w	970
Greensburg	WHJB	250w	620
Grove City	WSAJ	100w	1310
Harrisburg	WHP	500w	1430
Harrisburg	WKBO	100w	1200
Hazleton	WAZL	100w	1420
Johnstown	WJAC	100w	1310
Lancaster	WGAL	100w	1500
Lancaster	WKJC	100w	1200
Philadelphia	WCAU	50kw	1170
Philadelphia	WDAS	100w	1370
Philadelphia	WFI	500w	560
Philadelphia	WHAT	100w	1310
Philadelphia	WIP	500w	610
Philadelphia	WLIT	500w	560
Philadelphia	WPEN	250w	920
Philadelphia	WRAX	250w	920
Philadelphia	WTEL	100w	1310
Philadelphia	KYW	10kw	1020
Pittsburgh	KDKA	50kw	980
Pittsburgh	KQV	500w	1380
Pittsburgh	WCAE	1kw	1220
Pittsburgh	WIAS	1kw	1290
Pittsburgh	WWSW	100w	1500
Reading	WEEU	1kw	830
Reading	WRAW	100w	1310
Scranton	WGBI	250w	880
Scranton	WQAN	250w	880
Silver Haven	WNBO	100w	1200
Sunbury	WKOK	100w	1210
Wilkes-Barre	WBAX	100w	1210
Wilkes-Barre	WBRE	100w	1310
Williamsport	WRAK	100w	1370
York	WORK	1kw	1000

STATE TOTAL NIGHT: Units due 12.43. Units assigned 12.42.

STATE TOTAL DAY: Units due 22.45. Units assigned 14.76.

## OTHER STATIONS IN PENNSYLVANIA

<i>Class of Service</i>	<i>Licensee</i>	<i>Location</i>	<i>Call Letters</i>
Aviation-			
Aeronautical	Aeronautical Radio, Inc.	Pittsburgh	WAEC
	Aeronautical Radio, Inc.	Philadelphia	WAEE
	Aeronautical Radio, Inc.	Suburban	
	Aeronautical Radio, Inc.	Cresson	WAEG
		Kylertown	WNAM
Aviation-Airport	Aeronautical Radio, Inc.	Kylertown	WMEM
	Allegheny City Municipal		
Emergency-	Airport	Pittsburgh	WMET
Municipal police	City of Harrisburg	Harrisburg	W3XBJ
	City of New Castle	New Castle	WPGT
	City of Oil City	Oil City	WPHZ
	City of Philadelphia	Philadelphia	WPDP
	City of Pittsburgh		
	Police Department	Pittsburgh	WPDU
	City of Reading	Reading	WPFE
	Borough of Swarthmore	Swarthmore	WPFQ
Emergency-	Pennsylvania State Police	Harrisburg	WBA
State Police	Pennsylvania State Police	Butler	WBR
	Pennsylvania State Police	Wyoming	WDX
	Pennsylvania State Police	Greensburg	WJL
	Pennsylvania State Police	Reading	WMB
Emergency-	Pennsylvania State Police	Harrisburg	WPSP
Special Emergency	Pa. Power & Light Co.	Frackville	WBI
	Pa. Power & Light Co.	Hazleton	WCJ
	Pa. Power & Light Co.	Williamsport	WPH
Geophysical-	Lehigh University	Bethlehem	WJEK
Geophysical	Lehigh University	Bethlehem	WJEL
Experimental-	Borough of Lansdowne	Lansdowne	W3XT
Gen. Exper.	Borough of Sharon Hill	Sharon Hill	W3XBR
	City of Bethlehem	Bethlehem	W3XBA
	City of Bethlehem	Port.-Mobile	W3XBB
	City of Bethlehem	Port.-Mobile	W3XBC
	City of Clairton	Clairton	W8XCR
	City of Harrisburg	Harrisburg	W3XBJ
	City of Harrisburg	Port.-Mobile	W3XBK
	City of Harrisburg	Port.-Mobile	W3XBL
	City of Harrisburg	Port.-Mobile	W3XBM
	City of Harrisburg	Port.-Mobile	W3XBN
	City of Harrisburg	Port.-Mobile	W3XBO
	City of McKeesport	McKeesport	W8XBE
	Commissioners of Lower		
	Merion Township	Ardmore	W3XS
	M. & H. Sporting Goods Co.	Portable	W3XAW
	Radio Service and Engineer-		
	ing Laboratories	Harrisburg	W3XAN
	RCA Communications, Inc.	Philadelphia	W3XAO
	Township of Haverford	Brookline	W3XAR

	<i>Licensee</i>	<i>Location</i>	<i>Call Letters</i>
	Westinghouse Electric and Manufacturing Co.	Pittsburgh	W8XS
Experimental-	City of Philadelphia	Mobile-Phila.	W8XU
Spec. Exper.	Atlantic Communications Corp.	Philadelphia	W3XAY
Experimental-	Atlantic Communications Corp.	Mobile	W3XAZ
General	Atlantic Communications Corp.	Mobile	W3XDE
	Atlantic Communications Corp.	Mobile	W3XDF
	Atlantic Communications Corp.	Mobile	W3XDG
	Atlantic Communications Corp.	Mobile	W3XDH
	Atlantic Communications Corp.	Port.-Mobile	W3XDK
	Atlantic Communications Corp.	Port.-Mobile	W3XDL

